ahimsa toys are

Toys with love and care.

Toys with power.

Toys with politics.

Toys that can change our lives.

Toys that can be made with everyday materials.

Toys that can be repaired.

Toys that attract both children and adults.

Toys that teach self-reliance and sustainability.

Toys that teach, value of subjects, resources and humans.

Toys that take away the "use-and-throw culture".

Toys that teach basic lessons of engineering and design.

Toys for both Learning and Un-learning.

Toys that liberate one from consumerism.

Toys that make one realize how simple life is.

Toys that lead children to a new world.

Toys that teach us about how we build our own world.

Toys that help us see objects and life with an all-new perspective.

Toys with a message of non-violence.

‘AHIMSA TOYS’

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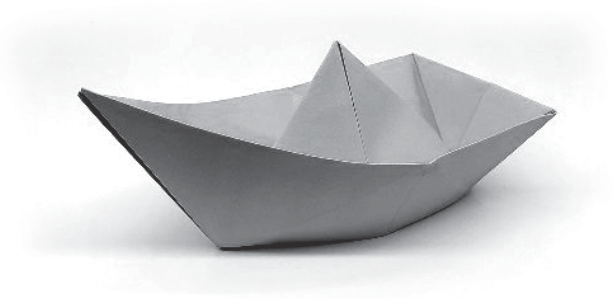


Warning #

More than toys what children need is understanding minds.
No toy can replace the freedom or care that children need.

Notes #

The toys described here are only an extension of Padma Shri Arvind Gupta's work. This is NOT intended to limit one's imagination, but to extend it. This book is open-ended. You may invent new toys or better these ones and expand on them.

Thanks and dedication #

Padma Shri. Arvind Gupta, Children of the world, Friends of Cuckoo, Friends of life.

Special thanks to Ajay Sahai, LK. Das, Sudarshan Khanna, Alabhya Singh, Basheer Sujeevanam, Ajesh T Sivan, Vidya Shaji, Manu Jose, Dr. Vijayan, Prabitha Prabhakaran, Latha Karuthedath, Sajai Jose, Vijaya, Anuradha Sarang, Sini M P, Sivaraj, Prakash Kamal, Sankar, Shilpa, Sanoj, Vajeesh, Bibeesh Adil, Ameya, Ranjith, My mother, father and brother.

Preface

In a world of increasing troubles, our solutions to them are mostly of violence (Himsa). Whether it is a mosquito or a terrorist, we try to kill and "solve" the trouble. But will it actually help? I believe that it rather "converts" the trouble to a more complex one. It's like modern medicines that change the name of one disease to another. Any solution that doesn't find the reasons of troubles and correct them, won't work. But when governments themselves are constituted with violence, the solutions that they offer are also violent. They create fear and hatred among people in order to sustain themselves. How can they work towards a world of peace when their survival is dependent on the arms' race? When a nation has to pay the doctors it produces, how can it think of a world without diseases! The advocates and the police will go jobless if justice prevails. Mahathma Gandhi talked about this in his book "Hind Swaraj" and used methods of non-violence (Ahimsa) and passive resistance in the freedom struggle. But today, the term AHIMSA is often misunderstood and misused. In this book, I try to make it clear that non-violence works and it has the power to change minds and matter with the help of some toys. Usually our attitude towards waste is of hatred and fear. We try to get rid of it immediately either by throwing it away or by burning it. Both make the trouble worse**. A change of attitude from violence to non-violence can convert the wasted materials to beautiful toys, converting wasted minds to positively creative.** They can help in unlearning the stupid knowledge weights that we acquire during our normal education. So, they are toys for both children and adults - for learning and unlearning.

CONTENTS

Toy workshops and learnings.

Though I could hardly make a handful of toys by myself, I was able to conduct more than 600 workshops in Kerala, Tamil Nadu and other states of India because I was an understanding friend to children. I encouraged sharing and admitted mistakes too. I didn't see them as "empty slates" and I admired their primary quality of innocence. I was not a "Mr. Know-It-All" and what I only knew was "anything can be made" and "some basic lessons of making". I believe that a child learning to walk can walk the around the globe. I created interest in them through toys and answered their questions. I gave them space for learning by oneself and learning from friends. I believe that we need to learn to "NOT make" also. In my classes, children had the freedom to do that too because they know themselves better than I know them. They can join the rest whenever they feel up to it. We need to repair whatever we have wrongly made. Beware of creativity at wrong spaces as a creative person in heaven can convert it to hell. Sometimes, it's better to leave things as they are and let nature do its work.

The interactions itself were group games of sharing and caring. My intention was not to use the children to solve all the troubles created by wrongly educated elders. My intention was to help them decide their own future and give them basic lessons of self-reliance and sustainability. I wanted them NOT TO repeat my mistakes. I tried to take away gender and other discriminations too, through toys. I tried to inculcate the idea of socialism and some other good values of life through toys. Thus I was setting up an example of better teaching.

The key findings of these interactions can be listed as below:

The best thing about children is that they have less prejudice. They live in the present. They are not divided in the name of caste and colour unless we teach them to. They are open to new ideas and like to correct themselves. They are highly creative in their young days but as they become “more learned”, creativity decreases. Why? The villain I found is our education system. Our education system which discourages questioning and encourages slavery. Our education system which doesn’t give space to diversity. Our education system which discourages sharing and encourages individual growth and competition. This is the exact cross-section/microcosm of our civil society too. What the system need is slaves to run it. They need buyers for the market economy.

Children correct us. They love to learn. But adults like to teach. They don’t give space for children to learn and take away their self-confidence. They are not given time to digest what they have been fed. Even the best food is poison if provided at a wrong time. In India, rich and middle-class children are overfed and the poor underfed. Thus, the toy-making workshops are in a way, a movement for justice. A movement for self-reliance and sustainable development. I called it “**Toy-Swaraj**”. (Swaraj : self-rule). It gives a message that “*Our world is built by ourselves*” and freedom is NOT something that can be bought.

World of Waste

Can we eat a toffee wrapper? This is a general question that I ask children in my classes. The answer is “NO”. But why? Have you ever tried it? Somehow many have arrived at this conclusion that one cannot eat a toffee wrapper. Some might have been influenced by elders, or books, or seen instances of animals dying eating plastic. I tell them, there is another friend also who cannot eat plastic, and that is the mother earth. Whether we dump or burn plastic, she cannot digest it. But my question to you is, is plastic really “waste”?

The concept of waste is for the rich and the “educated”. The poor find some use for everything, and so do kids. My humble request to all of you who are concerned about waste is, it’s the wasted minds that need primary attention. Also remember, time (in a way, life itself) is the most wasted commodity. Now coming back to the first question of whether a toffee wrapper is waste or not, let me ask another question, “Can a currency note be termed “waste” or not? If your answer is “No”, that answers the first question too. It is our eyes that attribute value to an object. For an animal or a kid, the currency note obviously has a different use. So a toffee wrapper is not waste at all. It’s of some use. It was used for wrapping a toffee because it had some qualities. Once we eat the toffee, the very next moment we forget the value of the wrapper, and it becomes “waste” or “unwanted” to that person. Answering all questions about ‘waste’’ is beyond the scope of this book. But let me share some more views on it.

Materials can be generally classified as “Natural” and “Human-made”. Each material has its own unique properties. The only difference between these two categories that I have observed is that nature knows how to handle the materials

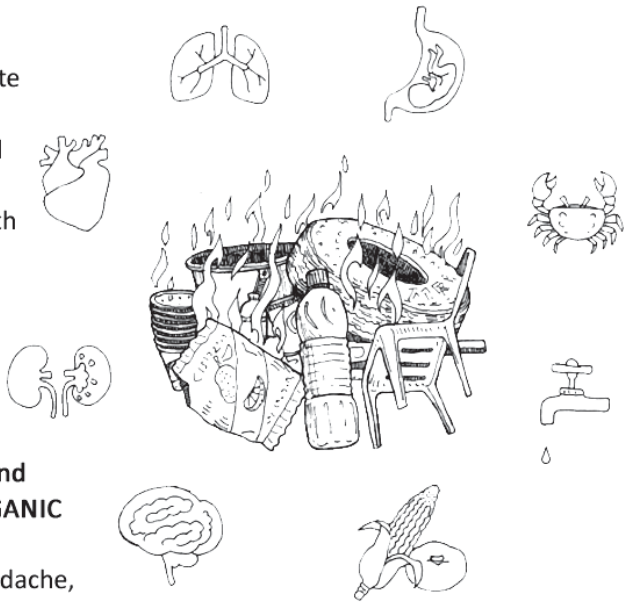
it makes, but human beings don't. Mainstream development not only creates "waste", but also dumps it on the poor putting their lives at risk besides asking them to clean it. Nations develop the science that send people to the moon or Mars to create more colonies, leaving behind the beautiful earth a dustbin. Nuclear waste, the radioactive by-product of nuclear energy is highly dangerous to life but we are less bothered about that now in the run for making energy. The famous "*Three R solution*" (Reduce, Reuse, Recycle) is not effectively implemented in our country due to lack of awareness among people, lack of powerful laws, and administrative lapses. So it is the responsibility of all human beings who believe in social justice to be aware of the waste they create and how it is produced. I believe that the common man's culture of REPAIR is more valuable than the "three R's".

A basic knowledge about materials is a must to live in this planet. Each material behaves differently when treated differently. If burned, plastic - like substances will emit hazardous gases. If buried in soil, it won't decompose for a long time and will affect plant growth. It can clog a drain and cause floods in cities. There are other materials used in electronic goods (E-waste) which are harmful to health if they seep into the soil or water. *Up-cycling* is a new term used which refers to extending the life of such materials after use. "Toys from Trash" is a good example of up-cycling. Please keep in mind that shifting to natural materials like bamboo is the best option to save the earth and ourselves but with a disadvantage that it can't be mass-produced compared to modern materials. Another point to note is, packaging is a big source for the generation of "unwanted" things in the time of globalization. Giving details of each such material is out of the scope of this book, but let me describe how some such materials are used here to make toys. To get an idea of how to see the best use of each one, please look for other sources as well, to get extensive knowledge on materials.

BURNING WASTE

Burning of waste is not the answer since it releases hazardous materials into the environment.

PARTICLE POLLUTION:
It can aggravate asthma and bronchitis and has been associated with heart attacks.



DIOXINS:
These are highly toxic and can cause reproductive and developmental problems, damage the immune system and also cause cancer.

CARBON MONOXIDE and VOLATILE ORGANIC COMPOUNDS:
CM causes headache, fatigue, nausea and vomiting. VOCs cause damage to liver, kidney and central nervous system.

ASH:
It contains toxic metals such as mercury, lead, chromium and arsenic. Rain can wash the ash into ground and surface water, contaminating drinking water and food

World of Toys

Children love toys just as they like toffees and ice-creams. But are they really good for them? We seldom think of this. More than toys, in my view, what they need is the freedom and time to PLAY. When we fail to provide the latter, toys become an 'alternative'. In fact every object is a toy for them if we don't curb their wonderful power of imagination. A bucket of water, sand, a chair, or even a playmate! Each activity a child is engaged in, is an art of "play". It comes from the human instinct to explore life. Dismantling or "damaging" a toy is one of the ways children explore the science or truth behind it, but unfortunately we gift them expensive toys and create a fear of the consequences of breaking it. So they prefer to play with the packaging instead! Anyway, since toys are the friends of children at a very early age itself, the selection of good toys is equally important as selection of good friends or even good books for that matter. But what are the toys available around us today?

The mainstream toy-industry come in a wide range from the 'cheap' Chinese toys which we get on streets to the very expensive American toys. The first thing to bear in mind is, no matter how expensive or cheap they are, not many toys are repairable. Once it gets damaged or misses one part, the whole thing goes useless. Such toys hardly contribute to the growth of the child: rather, they inculcate a culture of "use-and-throw". Secondly, India being a poor nation, we have fewer arrangements to test the toxicity of the materials toys are made of. We don't bother much to observe and follow the written instructions as well. Third, the gender discrimination that some toys inculcate is another big danger. It asks us to follow the "rule" that dolls are for girls, and vehicles and weapons

for boys. Most computer games also carry a message of violence. Many modern age cartoons like Chota Bheem propagate violence. We are often not conscious about such small things. We can see it as part of the fast-developing world of violence but can't we have a better choice?

Opting for traditional toys is the second choice that still prevails in India. The flip side of this is, higher prices and lack of improvements and innovation. Palm tree toys from Odisha/Bengal, Wooden 'Channapatna' toys from Karnataka, 'Etikopakka' toys from Andhra Pradesh, etc. are good examples of traditional toys. Prof. Sudarshan Khanna's books like "The Joy of Making Indian Toys" elaborate on our rich heritage of toys. Unfortunately many traditional toy-makers struggle to sustain their lives in the fight to cope with modern toys.

Apart from these two industries, **there is a third option too, making toys by ourselves.** We had a rich culture of making our own toys in the past. We delighted our kids with toys made out of palm-leaves, coconut shells, wood, bamboo, mud etc. Such toys imparted some food for thought and action for the kids. They contained lessons in hands-on work and self-reliance which laid the base for their creative lives in future. Life was connected with toys. Nothing wrong in going back to this glorious past, but are they enough for today, in this fast moving world? Can we access those traditional materials easily now?

Here comes the relevance of toys made out of "trash materials"- materials easily available to children, often termed as "waste". Padma Shri Arvind Gupta is a pioneer in this art (www.arvindguptatoys.com). The attitude Ahimsa (non-violence) arouses wonder. It has the power to lead the world. These toys are well-playable and well-repairable too**.** In this book, I have selected some toys from that ocean of toys as they are, and some in an improvised manner. Some were retold to me by some children. Some are my own inventions and some

shared by my friends too. I have applied some product design skills to make each toy better accepted. I would be happy if children go beyond this book and do experiments and find news things on their own. This book serves as a guide only. It will teach how to use some simple tools and how things change with their applications and combinations of materials. It will give children an eye to see materials differently. Elders can use it as a tool to rediscover the kids within them, or as a tool to help children. It will help one to see how simple life is and to unlearn the stupid teachings one gets in schools. I came to know about many engineering facts not in my engineering school, but in these toys. Parents and teachers are also requested to find good games for children as they are more important than toys for the holistic growth of children. Please encourage team-work and group-games which have values of sharing and caring, a must for social life but sadly what we lack today. When we share, our wealth doubles.

Materials used in this Book

(1) Palm/coconut tree parts and bamboo : Palm tree parts are natural materials and there is no need to worry about its environmental impacts but their potential is seldom realized and used. Palm leaf is a very good material out of which many traditional toys and products are made. This book describes a wonderful toy that can be made out of "baby coconuts" (*machinga/vellakkaa*) and palm leaf stems- "*eerkkil*". One can search for other toys that can be made out of them. Bamboo is another beautiful material, called the material of the sustainable future as it can be planted and grown fast. The bamboo is not just a raw material of traditional toy-makers; they are good building materials too if harvested at the proper time and treated properly.

(2) Paper : Paper is a very common material of the learned world. They are of different kinds based on their thickness mainly. News papers, magazines, calendars, note books, wedding cards, A4 papers...the list is endless. The art of paper-folding itself is a vast one, called *Origami*. In this book, we are trying to make use of some of the properties of paper, not just Origami. Paper can be re-cycled or can be converted to pulp to make new shapes.

(3) Torn Balloons (Rubber) : Worried about the bursting balloons? Relax. They are very good material to make musical instruments. Balloons are made of rubber and are better decomposed compared to plastic.

(4) Plastic caps of containers and bottles : Plastic caps are of different size and type. They can be used in many ways.

(5) PET bottles (used for bottling water) : PET bottles are also of different varieties based mainly on their thickness. Rag-pickers collect them and it's good to hand it

over to them than dumping them somewhere or burning them. Many have applied their brains to make use of them and this book also gives one example.

(6) Used ball pens : Used ball-pens are made out of plastic and are a general "waste" found in educational institutions. In fact it was great if we could replace the old re-fill ink tubes but the profit based market doesn't support this. Many cheap pens don't have this option of replacement also. They are just meant for one time use. These days, "Paper pens" with a seed inside are considered as "eco-friendly" but throwing away the plastic re-fills on earth is NOT a good option. So better apply your brain before you do something. A shift to ink-pens is appreciated.

(7) Paper/Plastic straws : Plastic straws are replaced by paper straws in some parts of India these days but they are still available. It comes in many varieties based on its thickness and use. The bent ones, straight ones, the ones that come along with tetrapacks, the ones with the free gift balloons etc. If we look at the material, we could say it's a long pipe. We can make use of its properties in many ways.

(8) Old CDs : Compact Discs can be replaced by pen-drives but it still comes to the market for some reason. Being plastic, along with its toxic coatings, it's better handled care. They are accepted by rag-pickers but wait to read this book before you do it!

(9) Ice-cream balls : Ice-creams come in different shapes and types of packaging-the ball shape is one of them. It can be given for re-cycling, but it's a wonderful object to make a toy as described here, making use of its properties.

(10) Plastic carry bags : Plastic carry bags of less than 50 micron thickness are banned but we get them in rural India without trouble. They fly, get burned, get clogged in water channels, get eaten by an elephant leading to its death and create many other troubles. Being non-economical, rag-pickers avoid it. Better reduce the use of it by carrying a cloth bag for shopping next time but be careful about accepting

anything in the name of the “cloth bag” too. Let’s try to find out some good qualities of it which we can make use of. It can be reused, and can be used as a bucket to carry water also. If torn, it’s a thin flat waterproof sheet which can be used for making kites too. The glittering face of it can be made use of as a “light reflector” on dark surfaces at night. If cut properly, all plastic covers can be used as water proof containers or “purses”.

Think of other common materials around you that go wasted, that are found in abundance. Think of the best quality of each. What are the uses we usually find for them? What more can be done with them? Please try to find the BEST POSSIBLE USES. For example, please don’t think of composting food if someone is hungry near you. The village system of living with animals took care of food waste. Think how did that chain break while expanding to cities. Can you find any “waste” in a forest where modern man has not entered yet? Why does the rag-picker always look ugly when the one who throws waste in streets looks like film stars? These are some good food for your thought.

"Ahimsa Toys
Toys for learning and unlearning"

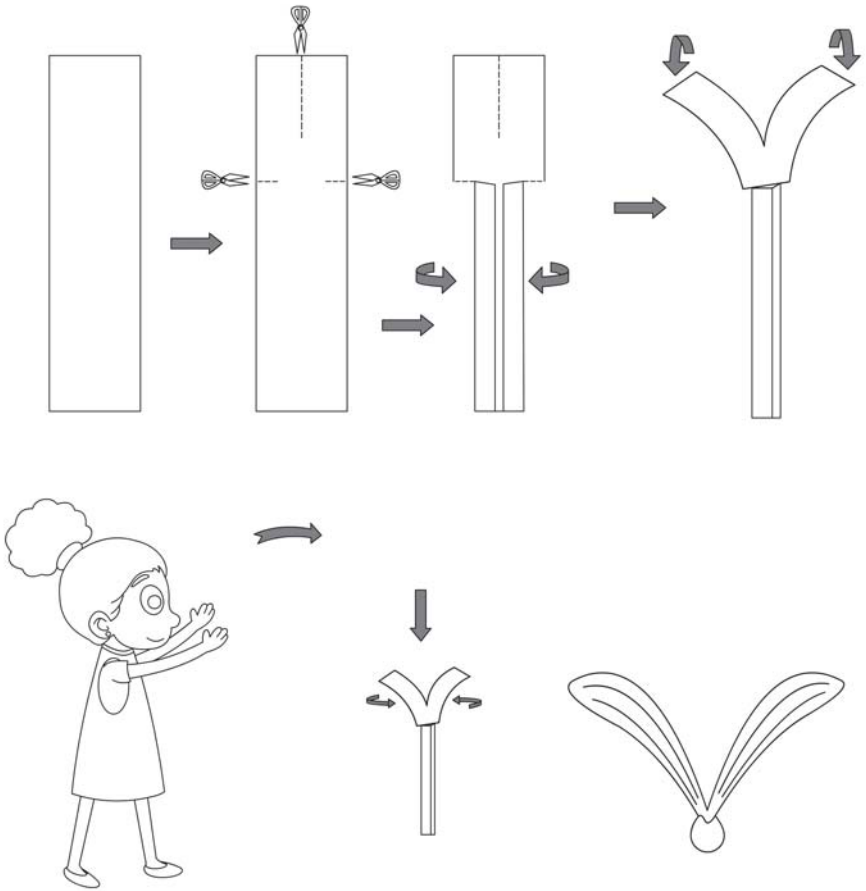
1. Y-Top

The simplest toy made,
Learning to fold and cut.

This is one of the simplest toys that anyone can “make”.

What can be done with a piece of paper? Write a poem on it? Make a paper ship? What else? Is it a must to do something? Sometimes not. But certainly, the same piece of paper can take different forms. What is the difference between a lottery ticket and a currency note? Think. What I am going to tell you now is to make one of the simplest toys I know.

Take a piece of A4 paper approximately 10cm x 3cm size. Throw that in the air. What happens? How does that move? Have you observed leaves falling down? Observing nature is the key to making new things. Now fold the paper in half at the top, approximately 3cm in length and cut it. Make two cuts just below this from both ends and fold towards the centre as shown. Twist the two flaps in opposite directions to get a Y-shaped figure. Please don’t press them too much as it might lose the Y-shape. The top is ready! Hold it from the bottom and gently let it go down. How does that behave now? What difference have our actions made to the piece of paper? Did you love it? Does it resemble some tops that you buy from festival grounds? Have you seen anything spinning like this in nature? Also try with papers of different dimensions and thicknesses.



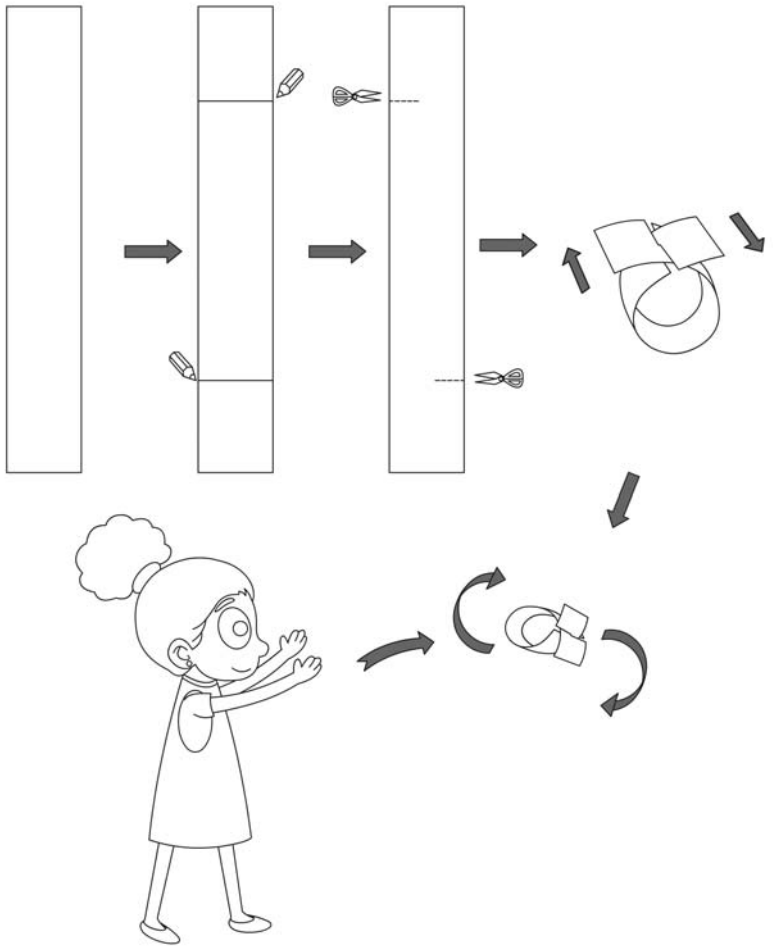
2. Fish top

Learning to cut and match,

Changing dimensions.

This is another quick toy one can make with paper.

Take a piece of A4 paper, approximately 10cm x 2cm size and fold it like an “eye” as shown. Fold a “tail” approximately 2cm long and unfold the paper. Now cut the paper through the two lines formed, half way through only, in opposite directions. bring them close together as before like the “eye”, but now, insert one cut into the other gently. We get a “fish” like structure. Adjust the “tail”. Now throw it high in the air. See how it works. Try with different colours and sizes. You may be able to see it being made if you visit Arvind Gupta’s web page. (<Flying Fish>)



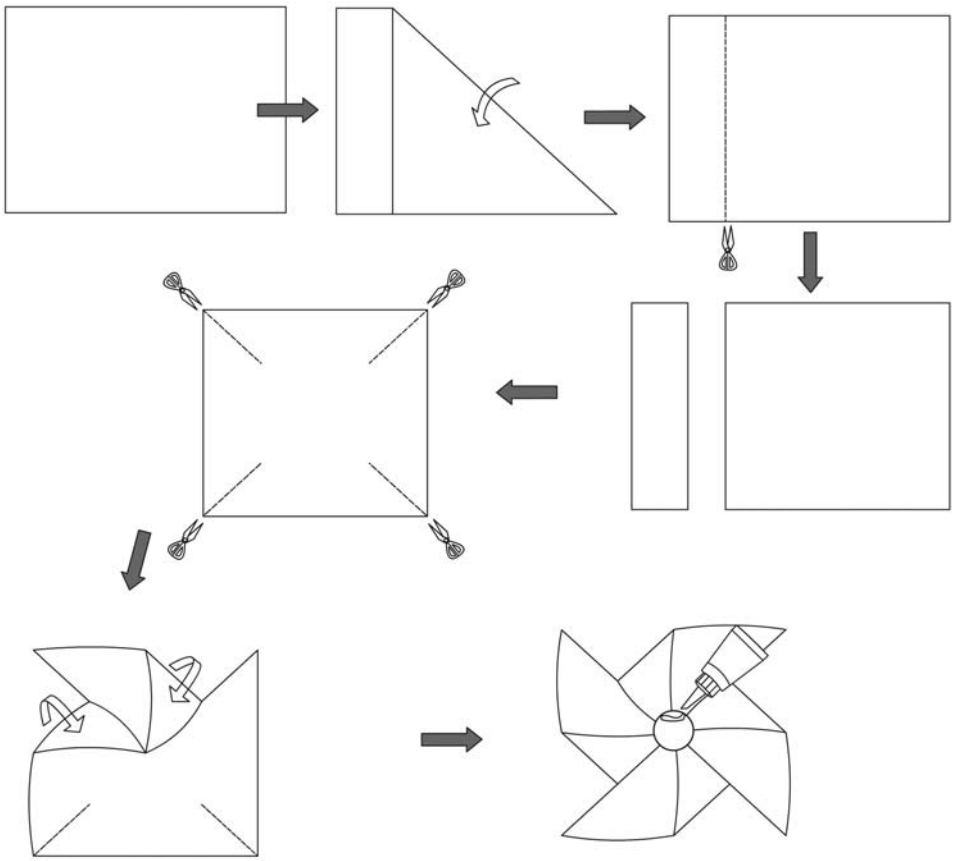
3. Normal Paper Fan

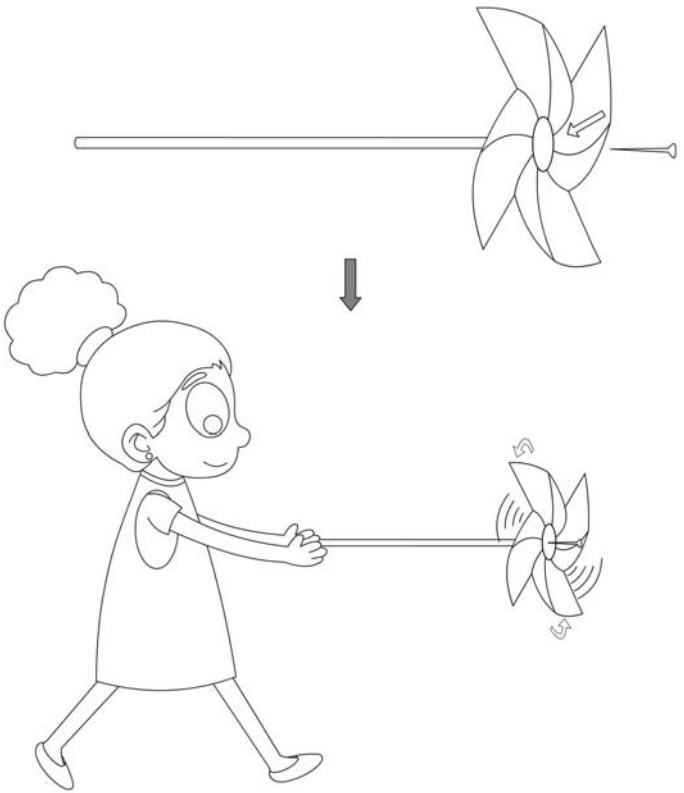
Learning to use glue,

Building confidence.

This is a popular toy I learned to make in my childhood.

Take a square piece of A4 paper- or take an A4 paper and turn it into a square. Fold and cut as shown. Glue at centre and fix one leaf there overlapping the centre point of the square. Then apply glue again at centre and fix the next. Fix all the four leaves like that. Overlapping the centre point would mean more strength to the structure. Cut two round shapes approximately 3cm in radius from the initially cut paper, and apply glue and fix them in the front and back at the centre. This is again to strengthen the structure. You are familiar with this shape I guess. Now take a sharp edged eerkkil and make a hole at the centre. You can put a normal eerkkil in and run to see if it spins. The only thing to remember is that the leaves should face the wind while running, not you. Also, be careful the eerkkil doesn't hurt anyone. If you are a professional, you may find other means of spinning it, like we do with the ones we buy from street vendors. What is need of this shaft to rotate? Any resemblance with the wind mill or a fan? What will happen if the fan faces you, and not the wind, while running? Discuss.



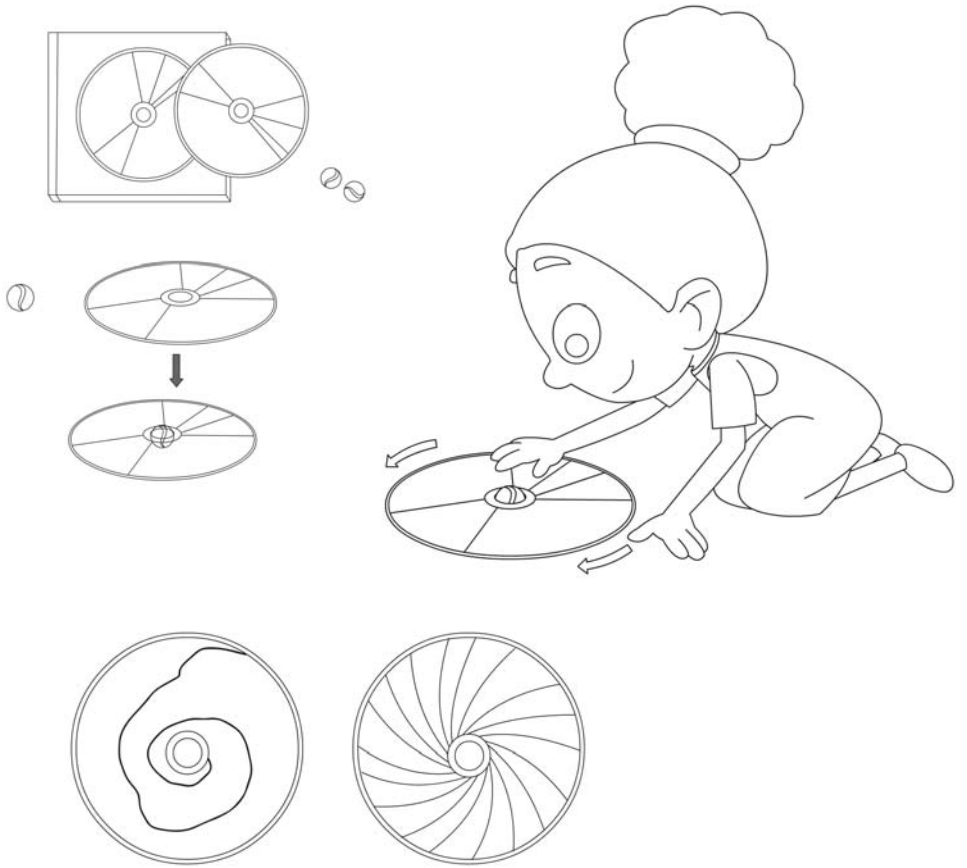


4. CD Top

New life in no time,
Unlearn complexities.

It's a beautiful toy which can be made in seconds. It always makes me think: When life is so simple, why make it complex?

All you need to make this is an old CD and a marble (vattu/goli/raashikkaay). The size of the marble should not be too big or small and it should gently fit in the centre hole of the CD. Ready? Now keep the marble on the floor or table top and keep the CD over that. The CD hole should rest on the marble. Keep your fingers on the CD. Turn it gently. Your top is ready! No need to fix the marble with Feviquick or glue as you can choose to take out the marble and play with it whenever you like. The only thing you have to be careful about here is that there is the danger of small kids under three putting the marble in their mouth. You can improve the appearance of the top by giving new designs and colours. How? Take half an A4 size paper and keep the CD on that. Trace out two circles with a pencil. Draw designs as you like on it and colour. Cut it and paste it on the CD. Don't forget to cut the centre hole! Even a kids' scratch produces a beautiful effect while spinning. Why? Can you make a Newton's disc out of this? Youtube: Arvind Gupta (<Newton's disc>)



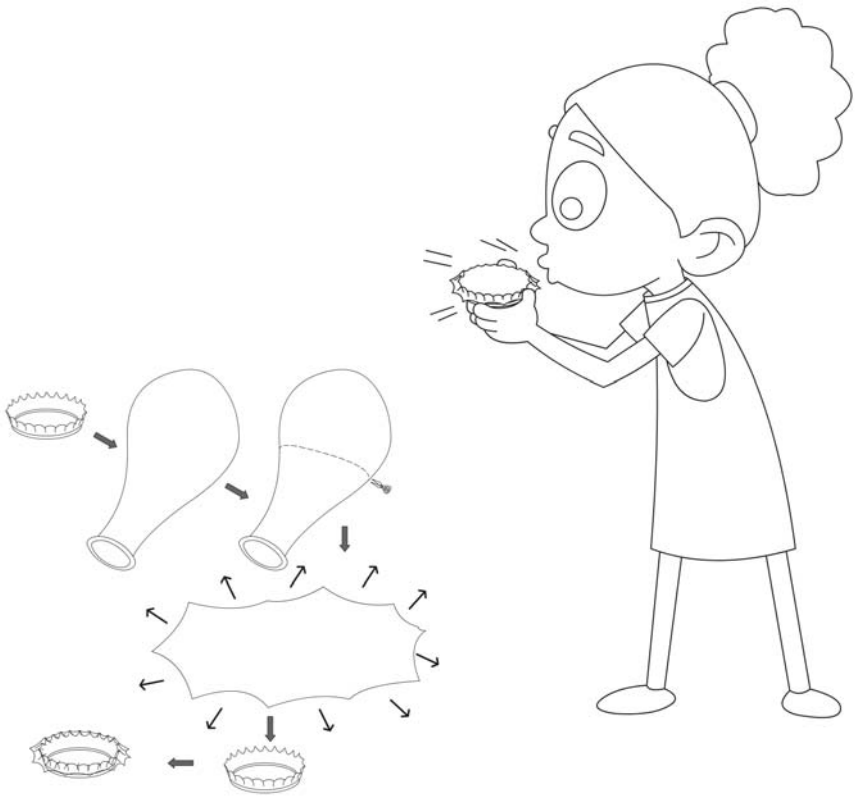
5. Crown Cap Whistle

Learning combination of materials.

It's a whistle that can be made in seconds.

Take a soda/cool drink bottle cap. Keep it on the floor with the open side up. Take a cut piece of thin balloon, stretch it to make it bigger than the cap size and place it gently over it. Done? You got a drum- like instrument? Now hold it in your hand as shown, take it near your mouth holding it upright and blow straight so that the air passes over it. Don't touch the balloon with your lips. Is the whistle ready? Okay, now, if you don't have a soda-cap, you may use a plastic bottle cap too. But observe carefully before you use it. It might have protruding sharp points on the circular surface which can be removed by rubbing it on the floor. Sharp edges of the metal cap also can harm the balloon so please change the cap if it is so. How does the sound come? Do you know how to whistle without using any instrument? Could you find any other use of this drum kind of instrument? Discuss.

Youtube: Arvind Gupta (<Crown cap whistle>)



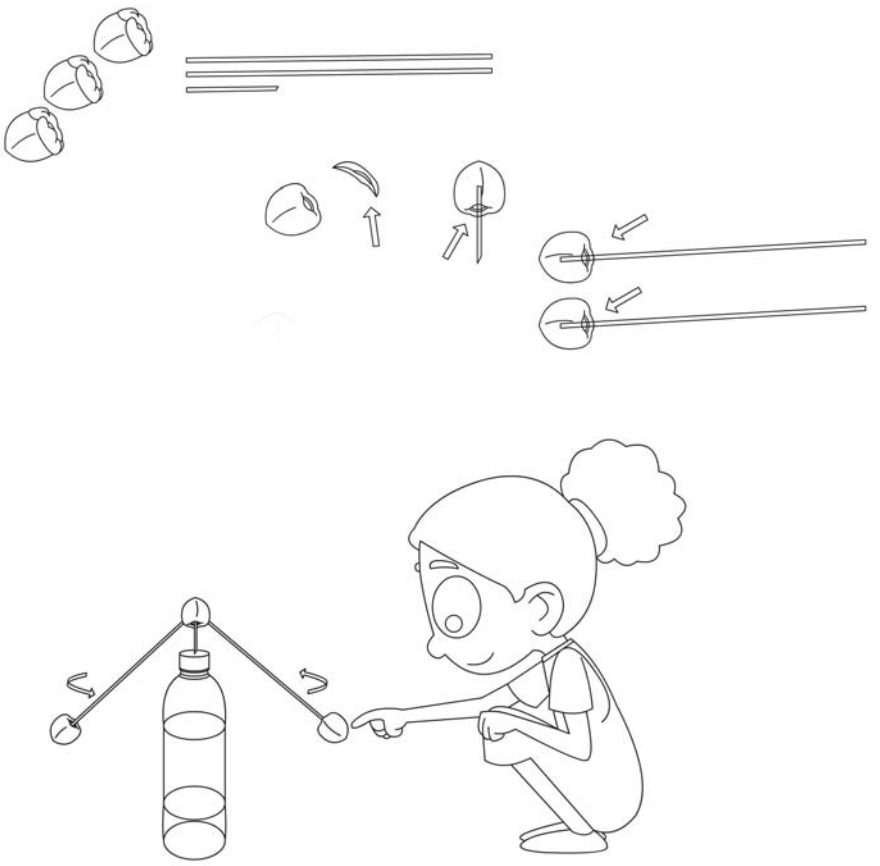
6. Wow-balance!

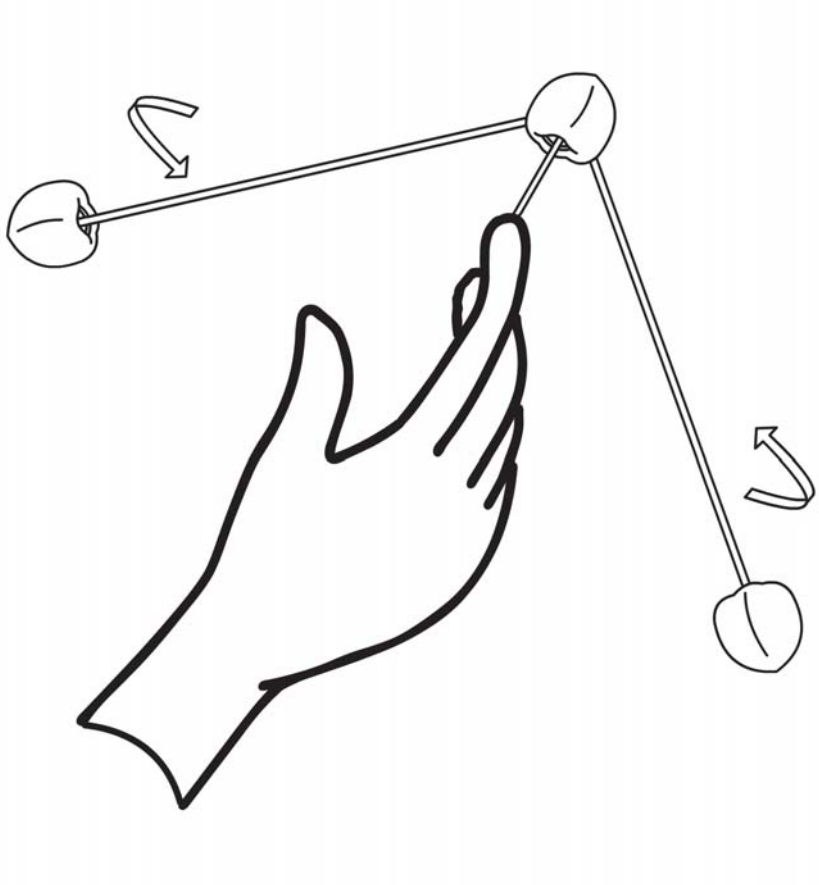
Learning symmetry and Balance of life.

Whenever I see or make these toys, they bring wonder and hope in the eyes of children and myself. This is a wonderful toy that can be made out of coconut tree parts, which is an improvised version of a toy from Mr. Arvind Gupta (<Balancing Toy>)

Materials needed : Three baby coconuts out of which two should be of almost similar size/weight, three strong eerkkils (palm leaf stems), two of which are approximately 20 cm long, and a small one of almost 3 cm.

Pierce and insert the long eerkkils into the two similar baby-coconuts through their tender parts (as shown). Remove the head cover of the third baby-coconut and insert the small eerkkil into it at the centre. Now we have two hands and a head. Insert the long eerkkils to the tender part of the third baby-coconut almost equidistant from the centre eerkkil as shown. This will make an angle with the central eerkil: good if they match. Now place the central small eerkkil at your finger tip. What happens? What if you keep it on a bottle head? Can you turn it? Why is it balancing? Take out the central eerkkil and pierce again, now forming a different angle with the central one. What happens now? Discuss. Can you replace the baby-coconuts with something that is more common to you? What if the lengths and weights vary?





7. Plastic Bottle Fan

Bring out the hidden potentials

You have seen how wind can rotate the wings of a paper fan (the common running toy fan). Now it's time to go for something that can last longer. A plastic fan, made out of the very common "waste" material, the PET bottle. This is from Arvind Gupta (<Bottle fan>).

Materials required : One PET bottle, One used ball pen, scissors.

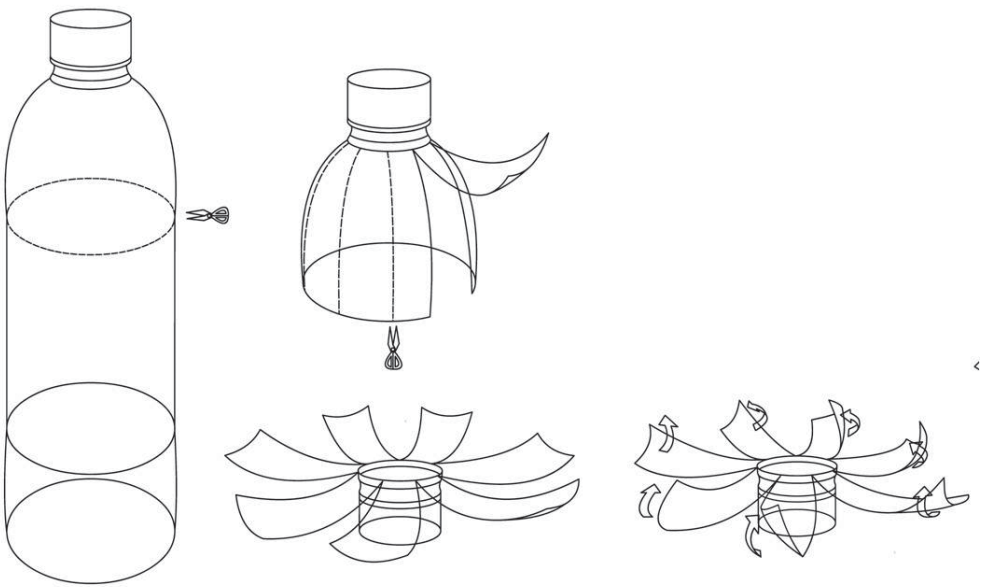
PET bottles are of different types. They come in different shapes and thicknesses. Thin ones (of bottled water) are best to make this fan.

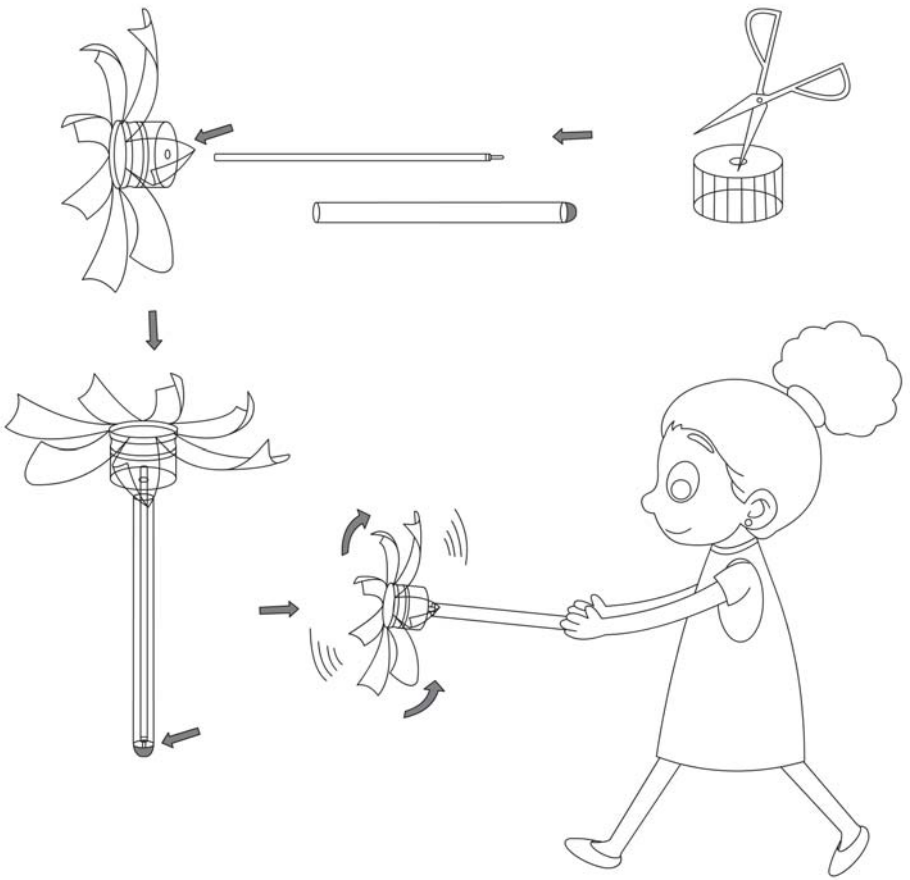
Cut the top portion of the PET bottle with a paper-cutter or scissors as shown. Cut "leaves" at regular distances (not very short or wide). Flatten the "leaves". Now it looks like a flower, right? Will it rotate by wind? Try by blowing air, keeping it on the ground/table. If not, we have to convert this "flower" into a fan by giving a "twist" to each "leaf" as shown. Please remember that all twists should be in one direction. Now try again by blowing air from top. You can see it rotating now.

It can rotate better on a shaft. Take the ball pen and remove the refill tube from it. Keep it inside the pen body itself, with the tip upside down. Make sure that it rotates freely inside that. We are keeping the tip down to reduce friction (Make sure that the bottom cap of the pen body does not have a hole at the centre). Now take the plastic cap out from the "fan" and keep it upside down on the floor/table. We are going to make a small round hole in the centre using one blade of the scissors, as shown, to fit the bottom of the refill tube. Make sure that the hole is not loose and the refill pipe is

stuck straight. Now, recap the cap on the fan and try running or keep it facing the wind.

You may make it colourful too. Can you think of any other shaft to make it rotate? Can you find any resemblance with the normal electric fan that give air to you? Can you replace any battery-driven toy by this? What will you do with the bottom of the bottle now?





8. Ice-cream Ball top

Learning more actions.

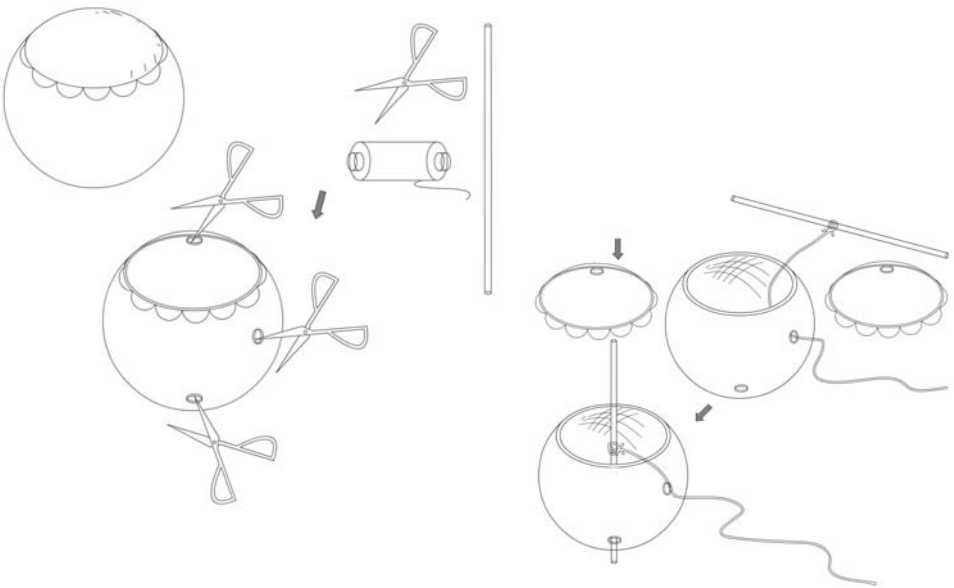
It was brought to my attention by one of my friends Vajeesh. This toy was made with some natural materials like the rubber seed years before in Kerala. Because of its non-availability, we use the ice-cream ball now.

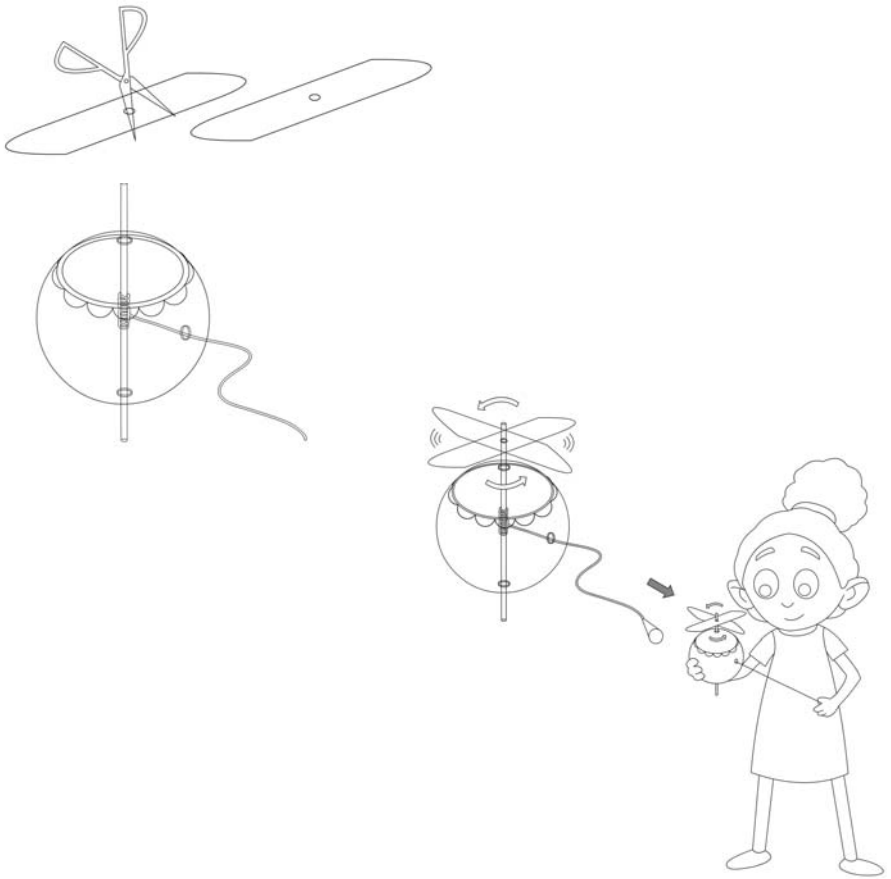
Materials needed are : one empty ice-cream ball, one strong stick (eerkkil) approximately 10cm long, strong thread of length 60cm, one ice-cream stick, and a pair of sharp scissors.

The good thing about an ice-cream ball is that it's a ball having a cap which can be fixed and removed. Remove the cap first and wash it thoroughly before we start. Now we have to make three holes on it with the help of small pointed scissors. One on the top, one at the bottom, and one on the side. All holes should be circular in shape, and the top and bottom ones should be slightly bigger than the side one. The strong stick (eerkkil) is supposed to rotate freely in this. Please make sure that you don't hurt yourself, or the hole gets elongated. You have to press the scissors' blade gently in and rotate it at the tip for the required size.

Once the three holes are ready, open the cap and take the thread through the side hole from outside to inside as shown. Fasten the end of it to the stick (eerkkil) strongly with enough number of knots so that it won't move. Now keep the stick (eerkkil) in the hole below and close the cap with the stick passing through the hole on it. Attach some thing at the free end of the thread outside so that the thread won't go in when pulled. Now, take the ice-cream sticks and make a small hole at the centre of them with a pointed scissors to fit perfectly to the top of the central stick (eerkkil). The top is ready.

Rotate the central stick (eerkkil) with the hand so that the thread will wind on the stick and now pull the thread, holding the ball tight at the other hand. What happens? How does it behave? If the hole on the ice-cream stick is loose, it might fly. You may attach two (ice-cream) sticks or attach one (ice-cream) stick at the other end too. Can a big plastic cap replace the ice cream stick? Try. Try giving colours to the (ice-cream) stick too. In what ways this toy be useful for you is entirely up to you.





9. Pen-cap Whistle

Becoming professional, Marking our voice.

It's an improvised version of a toy from Mr. Arvind Gupta (<Musical Obe>). I have selected some very common materials available to children.

If you have gained control over scissors, what is waiting for you is a professional whistle for a life-time! I recommend that small children take the help of elders to do this.

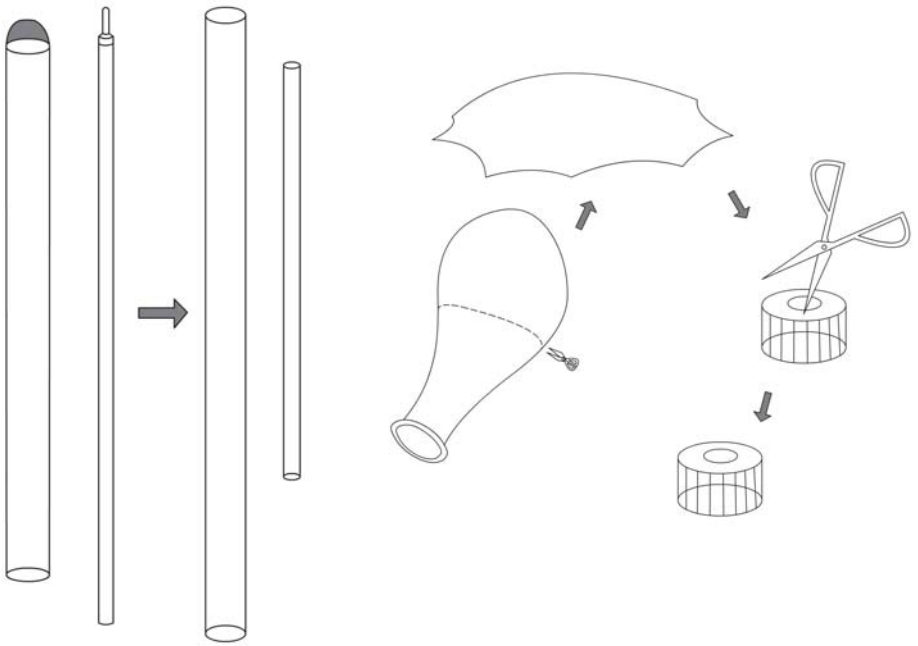
Materials needed : one used ball-pen with empty re-fill tube, one plastic bottle cap, one thin torn balloon, sharp scissors.

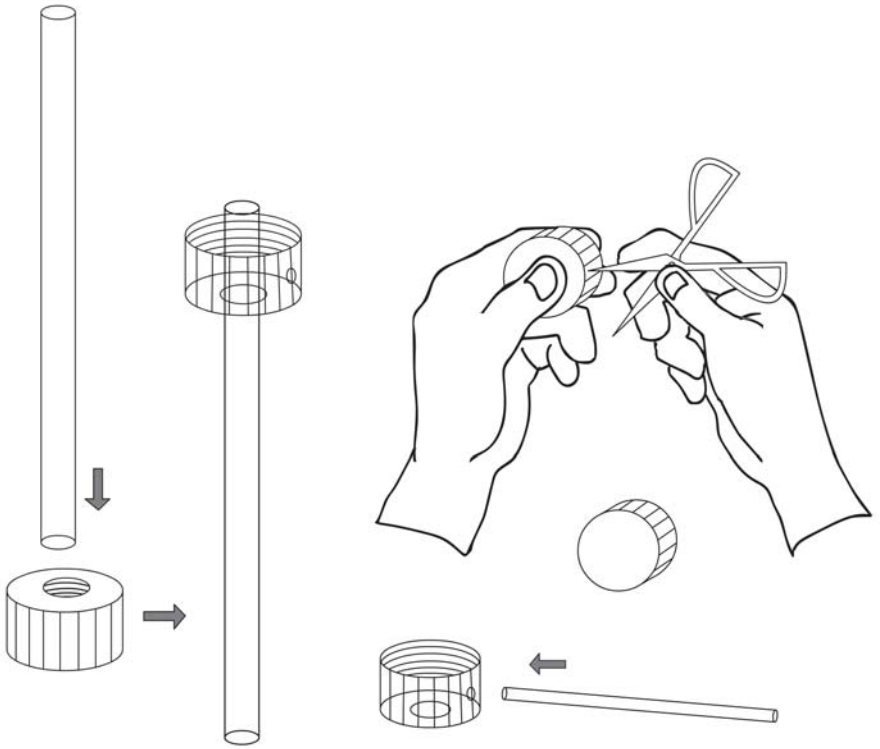
If you analyze a ball-pen, you can see that it is of different types and what we need here is a ball-pen from which we can remove the top and bottom covers (after removing the cap) and get a strong small "pipe" out of it. Please remember that pens are of different cross sectional shapes and here **what we need is a pure circular cross- section, at one end at least. The circular edge of this side should be flat, free from projections and holes too.** Once you get it, we need a second small pipe. This can be made from the empty refill tube or a tetrapack's straw. Cut it with scissors to get a pipe approximately 6cm long.

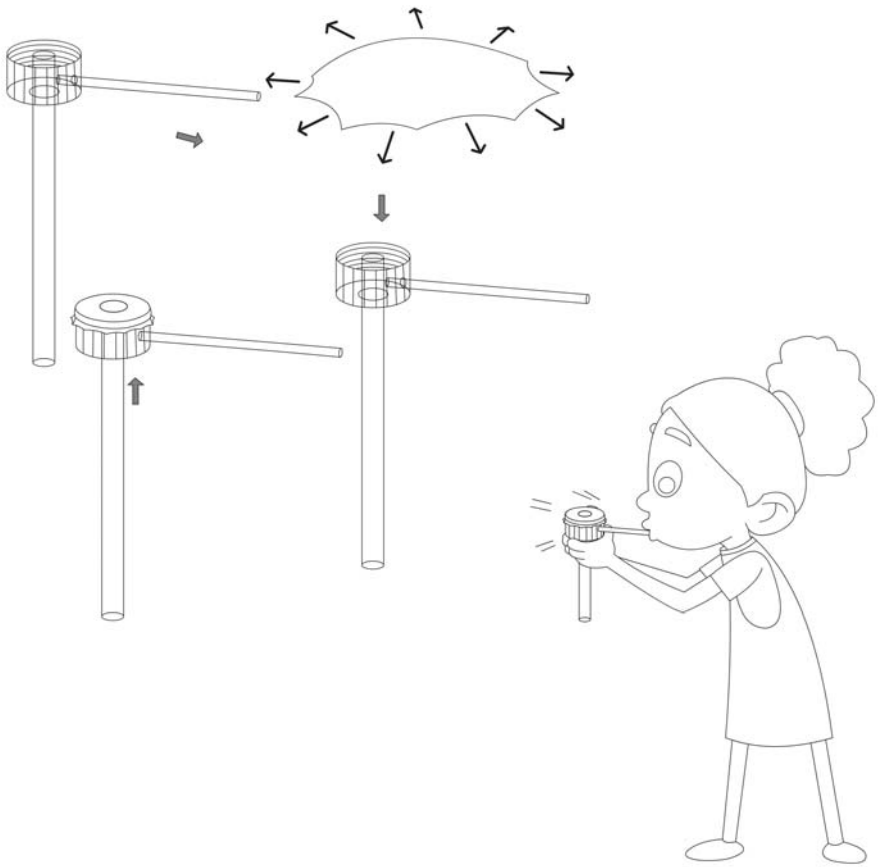
No need to throw away the remaining piece as it might be useful in some other way. Now, flatten the possible projections of the plastic bottle cap by rubbing it on the floor or table top and we are ready. Keep the plastic bottle cap down on the floor/ table with its open side facing floor and make a hole in the centre of it by gently pushing the tip of one hand of a small sharp scissors as shown. You can make the hole big by rotating the scissors, big enough to hold the cylindrical side of the ball-

pen body reaching up to the open surface of the cap. Follow TRIAL and ERROR method and please remember that the body should not be loose. Once this is done, you may remove the ball-pen body from it and then, with more care, you have to make a small hole on the side of the bottle cap to hold the small refill pipe. Please close the open side of the cap bringing all fingers together, as shown, and gently try to make a hole using tip of one hand of the scissors. Once a small hole is made, you may turn it to make it fit for the refill pipe. Be careful not to get injured. Small children are advised to take the help of elders to make holes. Now, refit the ball-pen body as before of which a small length of it comes out of the surface of the open cap.

Now we have a “two pipe-one cap” system. Please take a piece of thin balloon and stretch it bigger than the size of the bottle cap and keep it fit on the open side of the cap. You may take your friend’s help to hold it for convenience. Make sure that the cylindrical pipe below is touching the stretched balloon and it doesn’t have leaks. Our whistle is ready. Now blow it through the side pipe (re-fill). How’s it? The sound will vary according to the pressure applied. If there is no touch (of the bottom pipe to the stretched balloon) at all, there is no sound too. Why? Think. What if you couldn’t find the pen-body and re-fill? What if you put a non-cylindrical ball-pen body or one with a tapered end at the bottom? Explore.







10. Magic Fan

Brings out wonder and hope, From zero to hero

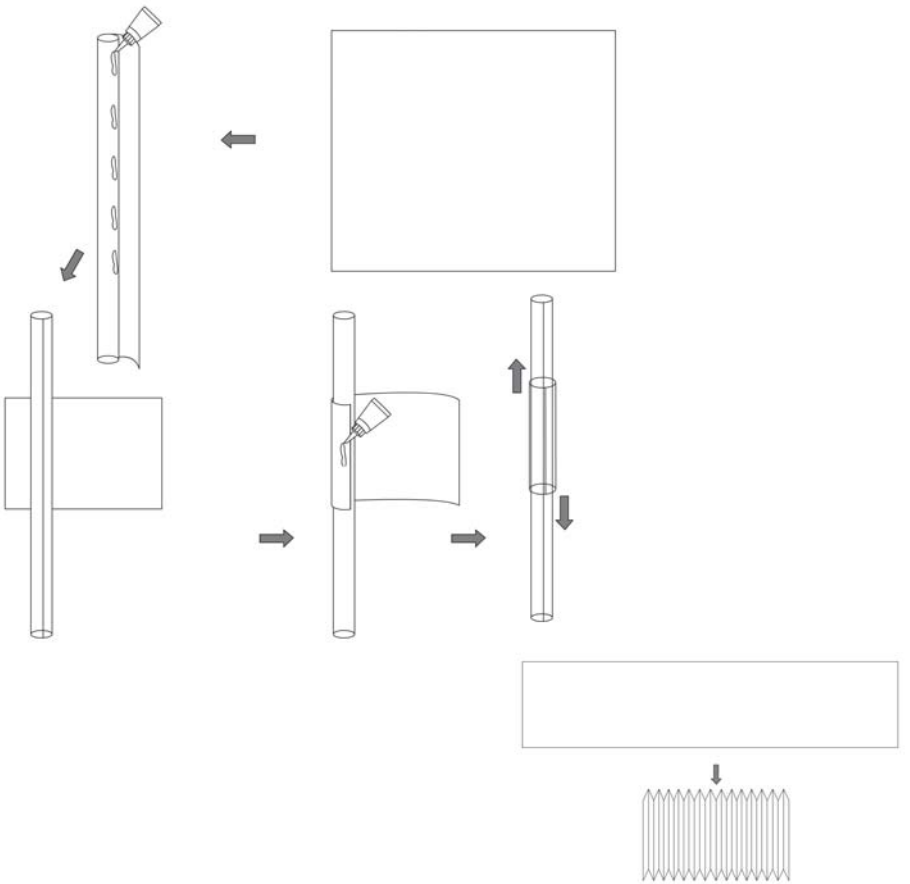
Mr. Arvind Gupta documented the making of this pure Indian traditional toy. (<Magic fan>) I call it *'Pratheeksha Vishari'* in Malayalam (Fan of Hope) because it gave me hope in life. A beautiful flower is kept inside a pipe which comes out and goes in with our finger movements. It's a ten year old who taught me how to make it, seeing Mr. Gupta's videos. It's a wonderful toy or item one can make or gift to a friend. It teaches the value of patience and practice too.

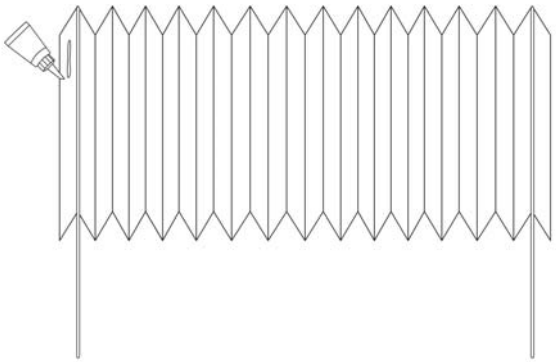
It is easy if you know how to fold a paper back and forth like you do while making a normal peacock or butterfly. We need an old calendar sheet, an old newspaper sheet, some strong thread and fevicol.

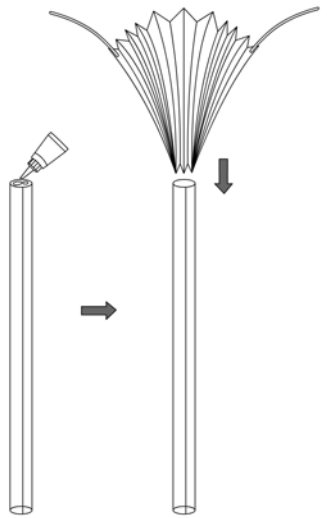
Cut a 30 cm x 30 cm calendar sheet, roll it to make a pipe of diameter 2 cm approximately, and glue it. Now take another calendar sheet of size 10 cm x 15 cm and roll it **over** the first pipe as shown. Here, you have to apply glue twice, once, at the beginning as shown and once at the end. **Please make sure that the second pipe doesn't get glued to the first**. It **should move freely over the first.** Now, cut a long piece of newspaper of size 8cm x 45 cm approximately. Fold it back and forth keeping in mind that after finishing, it should fit in to the first pipe. That means, the width of one fold should be less than 2cm. Finished? Great. Neat folds will look better and it's a skill that comes with practice. Now cut two pieces of strong thread almost 12 cm length each. Apply fevicol uniformly on the last folds of the folded news-paper, keep the threads in and close them as shown to fix. Press on the threads gently so that they get glued well. Please see that one end of the thread is protruding out at

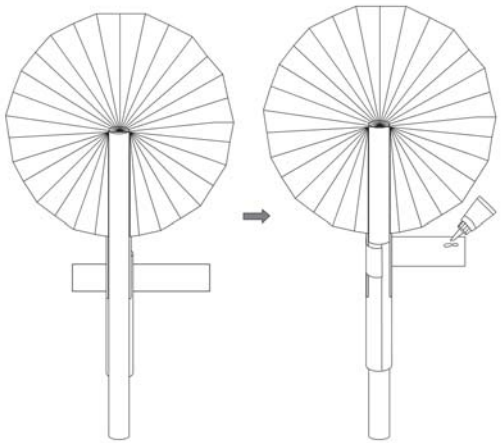
both ends, in the same direction. Now apply fevicol uniformly inside one end of the long pipe and fix the folded paper inside, keeping the thread ends outside, as shown. Make sure that the whole fold becomes a complete circle while the threads are stretched down. If it is not, the fold gets tilted while doing that. If so, take it out and insert it well into the pipe and try again. It's a Trial and Error method. If you get a full circle, fix it there, by pressing well at the glued end of the pipe. Now take a piece of calendar sheet, 2 cm x 10 cm size approximately, apply fevicol uniformly on it and use it to fix the stretched threads on the second pipe as shown.

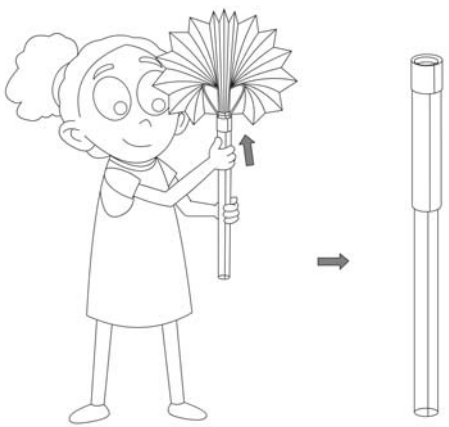
The second pipe should be kept just below the 'full circle' and threads have to be fixed one after another. Press on the thread so that it is glued properly and allow it to dry for few minutes. The magic fan is ready. You can see it giving air by waving but no magic in it, right? For seeing the magic, move the second pipe gently up, giving the folded paper a "guideline" to go in smoothly. You can see it covering the entire fan. Once you are done, you can move it freely up and down. You may add some text (like Happy Birthday to You!!!) on the long piece of paper before folding, and see what difference it makes.











11. CD Yo-Yo

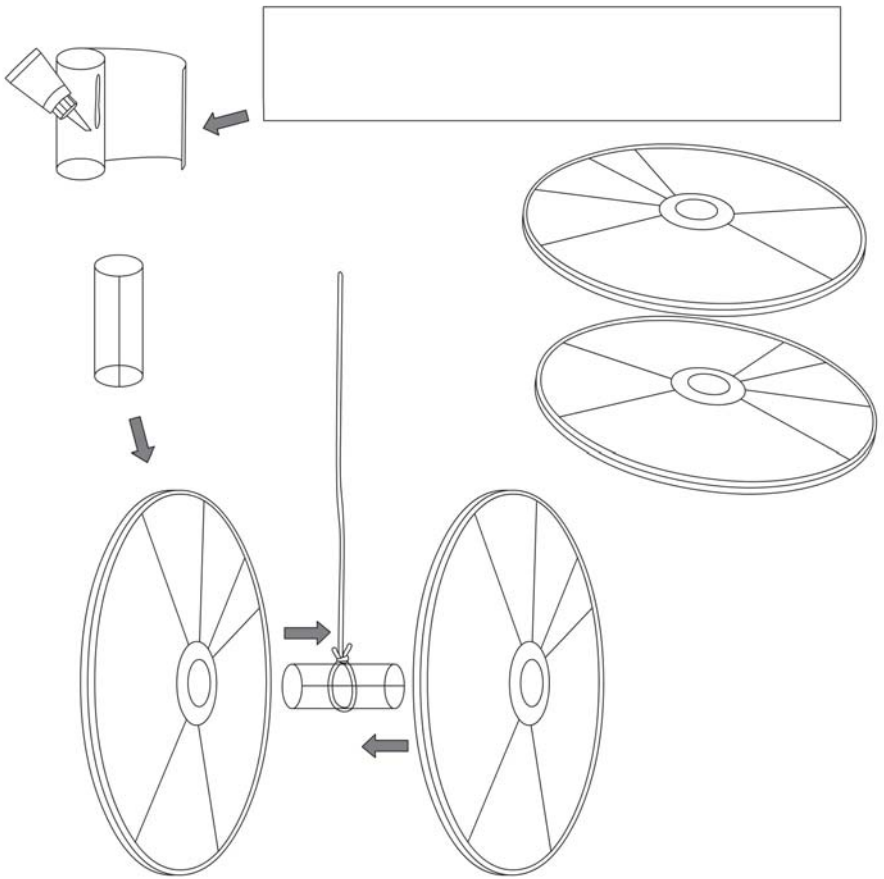
For every down, there will be an up!

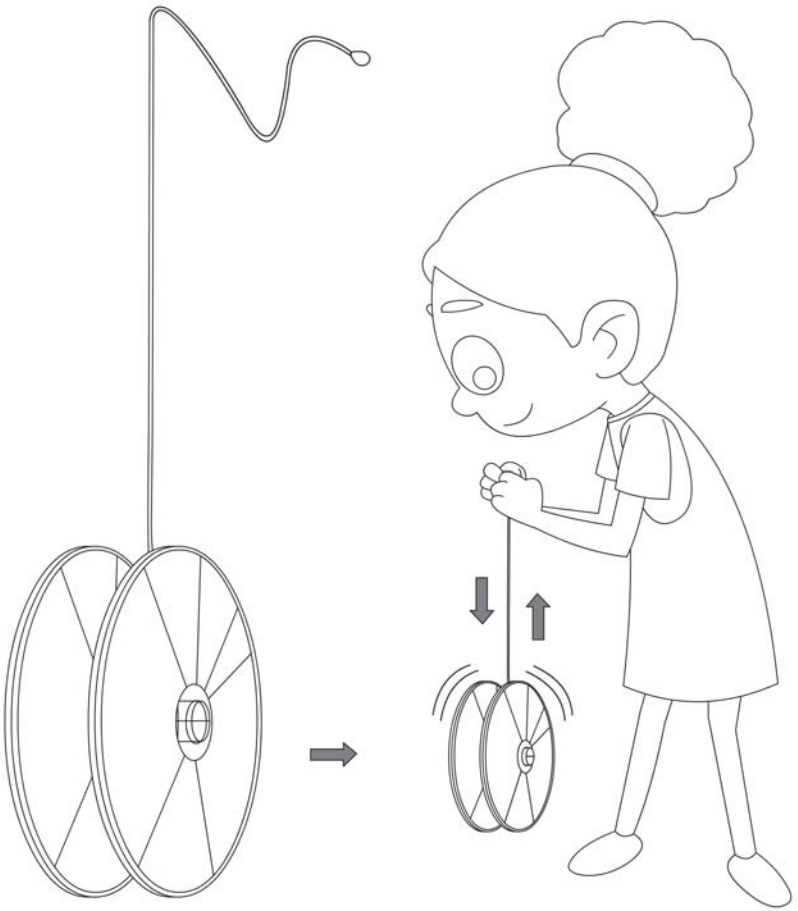
YoYos were a matter of wonder in my childhood. But I could never own one because of high prices. So, making this toy for no cost is always a delight to me. The best thing about this wonderful toy is it can give new life to two used CDs. It's an improvised version of a toy from Mr. Arvind Gupta.

Materials needed : two used CDs, a long piece of thick paper (calendar) approximately 4cm x 70 cm dimension, one piece of strong thread approximately 70 cm length and fevicol.

You might have seen the holes in the centre of all CDs. It's of the same diameter for all CDs. We are going to make a paper pipe perfectly fit into these holes by rolling the long piece of paper and gluing it. This can be done on a trial and error method. If the rolled paper fits loosely, add more paper and fix it. The CDs fixed should not be loose or moving. Now remove the CDs and tie a good knot at the centre of the paper pipe with the thread. Tie two or three times, winding the thread again for more security. Attach a button at the free end of the thread. We are done with the heart of our YoYo. Now attach two CDs from both ends leaving a small gap in the centre. The YoYo is ready.

Wind the thread at the centre and release CDs down, holding the button firmly in your hand. Once it reaches down, you may give it a pull upwards so that it will come up to the first point. The YoYO works. You may also give a push while it goes down but don't pull before it reaches the bottom point. What is the scientific principle behind the movement of YoYo? Discuss. You may make your YoYo colourful as you did in the case of the CD top. You may also adjust the length of thread for your comfort.



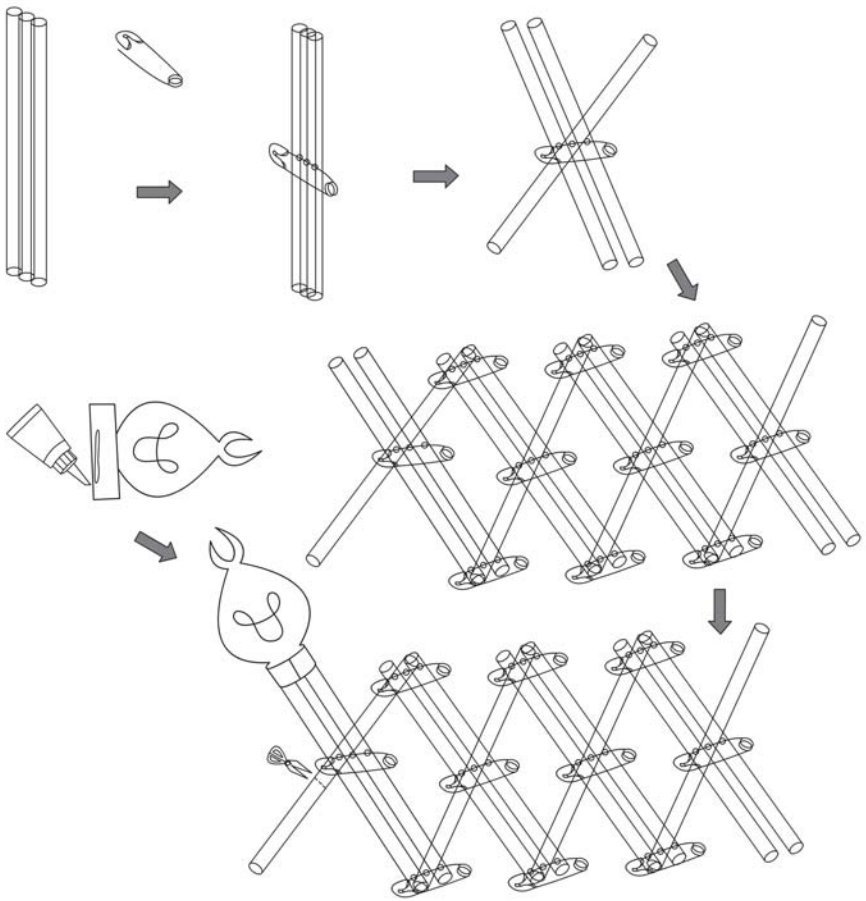


12. Straw Snake

Need of courage, Calmness and Vision.

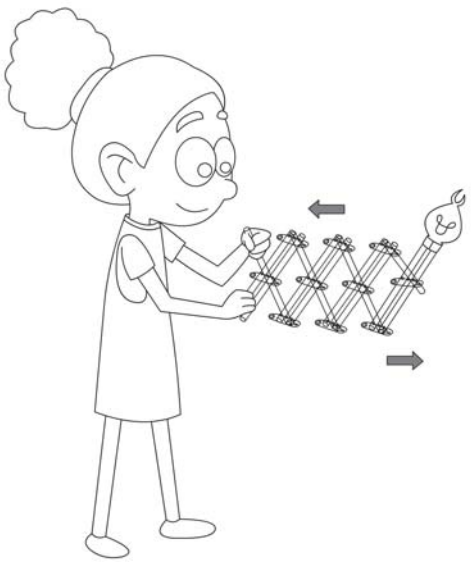
This is a simulated version of a popular traditional Indian toy. It was the result of thinking about the best use of plastic straws. I have replaced the natural material with a less natural one, just because the latter is in abundance in a city. As we have seen discussed earlier, straws are of different types. What we need here is nine numbers of straight straws (paper or plastic) of the same length and seven safety pins. If you have bent straws, you may cut the bent portion and use the other side. (we can find good use for these cut pieces later). Open a safety pin widely and pierce it through the centre of one straw. Pierce two more straws in the same pin and close it. This is one unit. Make two more units like this. Done? Now we are going to connect these units with safety pins.

You can see that the straws can move to both sides from the centre. Make an "X" like figure as shown in the picture, moving the centre straw to one side. Keep that in one hand and take a safety pin, Keep it widely open and pierce it at the top of the "X" at one end of the double straws, as shown. Now, holding it straight, keep one end of the single straw of the next "X" in between this "double straws" and pierce the same pin through these. Pierce the third straw also with the same pin and close it. In a similar way, we have to connect three straws in a row on the other side too. But this time, what we can do is, hold the two sets close together and then pin the three together, the single one inside the double. You can now see that the two "X"s are connected by two pins. You can see how it moves too. If they are not in alignment, (the two "X"s) you may redo it. That shows the need for vision. Or you can invent new ways of connecting also.



Have you seen such movement anywhere else?

Now you may attach the third unit to this in a similar mannerto get a longer connection. You can play with this alone, or also “convert” it to a “snake “. Draw a snake head in a relatively thick paper as shown and cut it. Glue it also as shown to get a pipe like structure at one end. This is our snake head. Place this “head”at one free end of our moving toy where two straws are together and cut the single straw down as shown. The “snake” is ready to play. If the “snake” is not coming close enough to hold in your hand, please try to redo the pinning. The movement of snake reminds us of the need of calmness before you move fast. If you don’t like a snake, you can think of attaching other “heads” too. Can you make the snake longer? Can any other shape be obtained by straws and pins? Think.



13. Spiral Snake

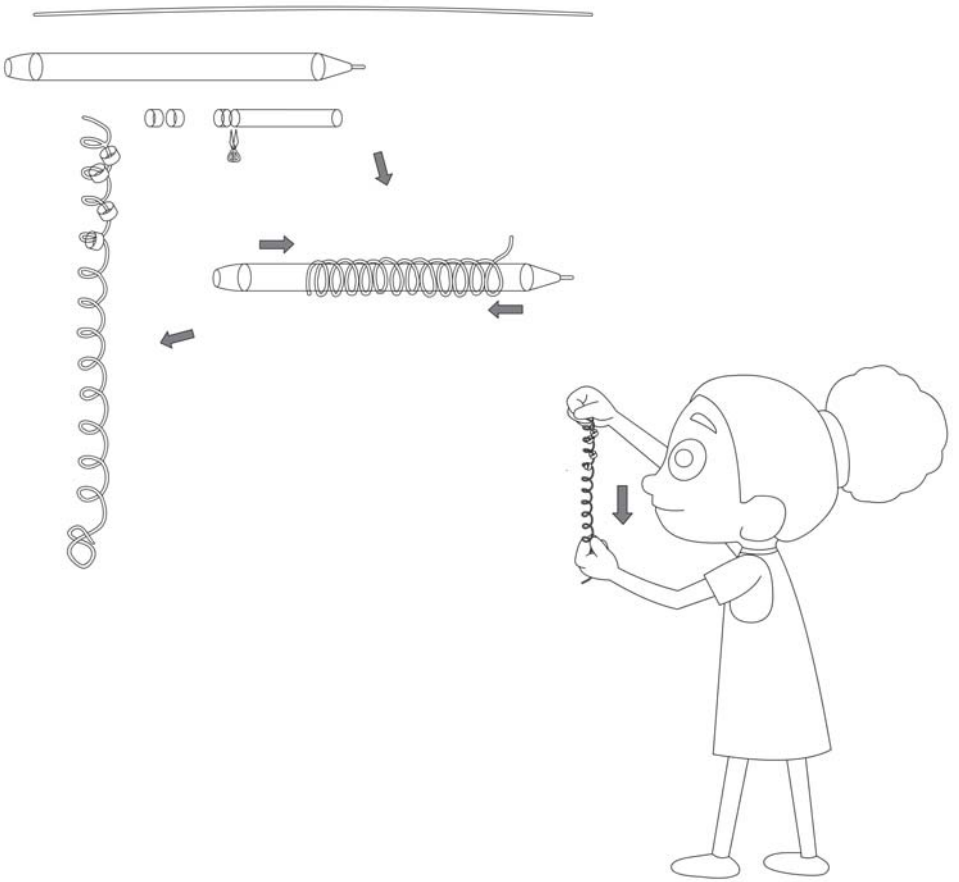
Life is beautiful, Nothing is waste.

It's one of the beautiful toys from Arvind Gupta (<Spiral snake>). It attracts both children and adults. It also carries a message that nothing is waste.

Materials needed : Some colourful (plastic) straws, one piece of metal wire approximately 30 cm length which you can mould in any shape, a round pen/pencil and scissors.

You may also take the cut pieces of bent straws that remained while making the straw snake. Now cut the straws in to small pieces approximately 2mm width. Five numbers of one colour is enough. We could have three such sets. Please press the straw pieces if it is "oval" in shape to make them "round". Keep them in a box so that they won't fly. Now take the round pen/pencil in one hand and wind the metal wire on it tightly. Press the 'winds' together and take it out to get a uniform spring like structure. Pull the spring holding the two ends by the hands to a length of approximately 25cm.

Now "close" one of the ends in round shape as shown. String together the straw rings one by one onto this wire through the "open" end. After putting in all colours, close the other end too. Hold one end in one hand and tilt it slowly. I hope you too liked it. Don't forget to tell your friends too. Can you think about something else other than straw rings? Try with different lengths of wire too. If the rings are not falling down freely, you may pull the two ends further. Please don't forget to check the floor before leaving for the straw rings that might have spilled over somewhere.



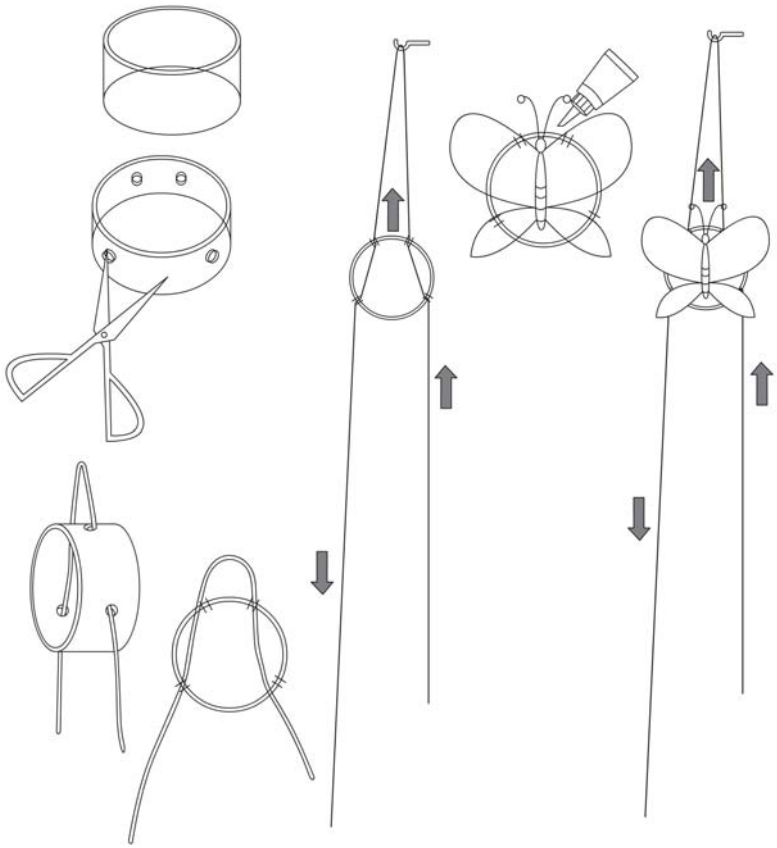
14. Climbing Butterfly

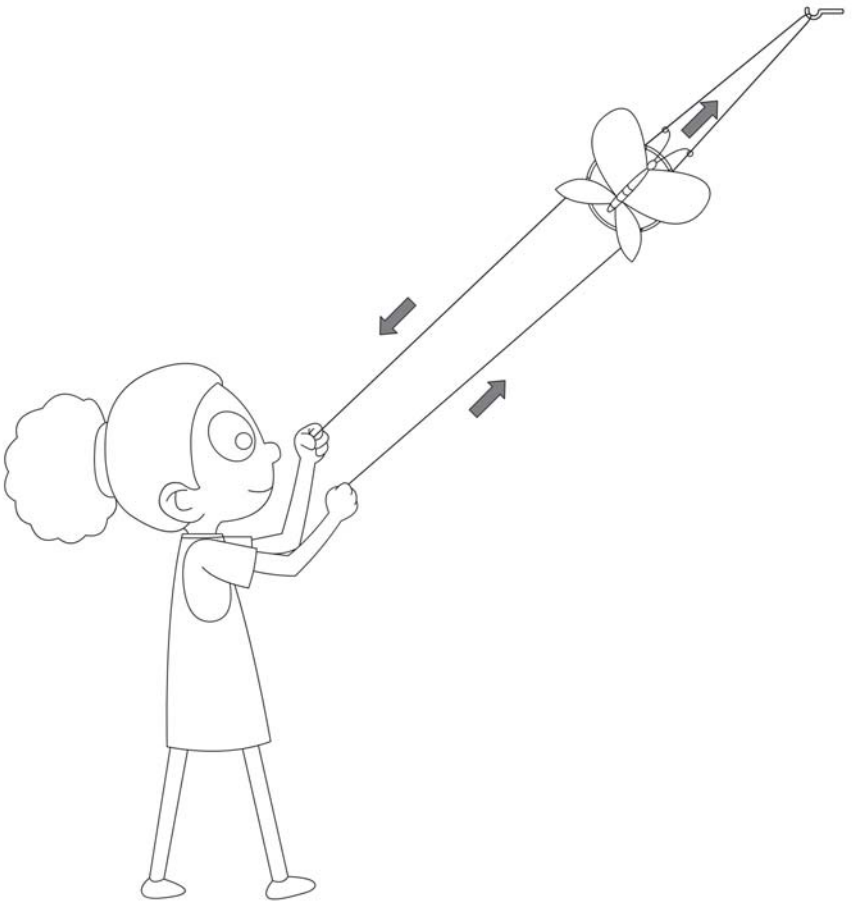
Brings out love, Raising hope.

If you have learned to make round holes on the side of a plastic cap, this lovely toy is for you to make. It's an improvised version of a toy from Mr. Arvind Gupta. (<climbing butterfly>) Small children may get the help of elder ones.

Materials needed : One plastic cap of around 5cm diameter (like the one on big 5 litre water carriers), strong thread of length approximately 2m, two buttons, and sharp scissors.

Make four holes on the sides of the cap as shown, two holes nearby and two holes some distance apart. The holes should be circular in shape. insert the thread through a distant hole and take it out as shown. Attach the buttons to the ends. Hang it on a nail or hook as shown. Now keep the cap down and move the thread ends one after another, as shown. The thread should be held tight and the ends should be pulled downward with each hand alternatively. What happens? The cap moves up. When the tension of thread is released, it comes down automatically. You may attach a butterfly figure on that and see the butterfly moving up and down. Can you make a Spiderman? What will happen if the thread is pulled in the opposite direction? Can you think about some other use of this mechanism???





15. Dancing doll

Brings out laughter, Learning patience.

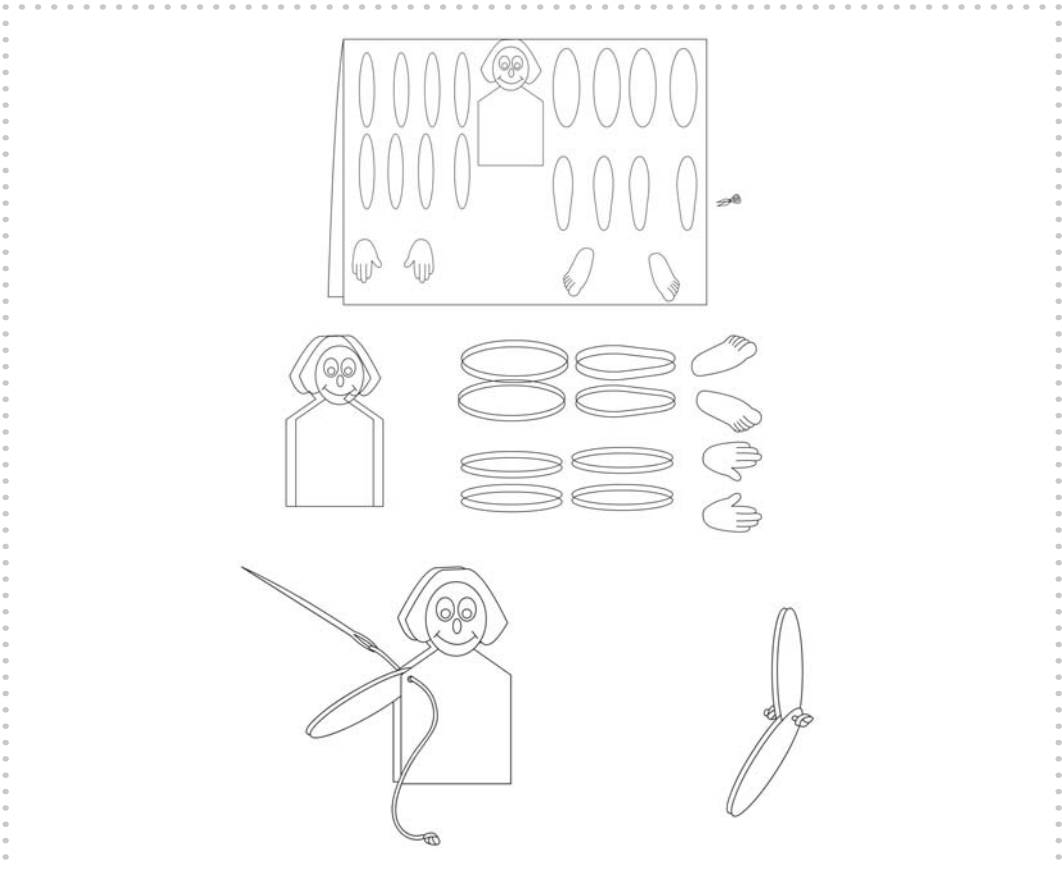
This is an Indian traditional toy originally, made out of palm leaves, still available to buy in the market. I learned this also from Mr.Arvind gupta (<Dancing Acrobat>)

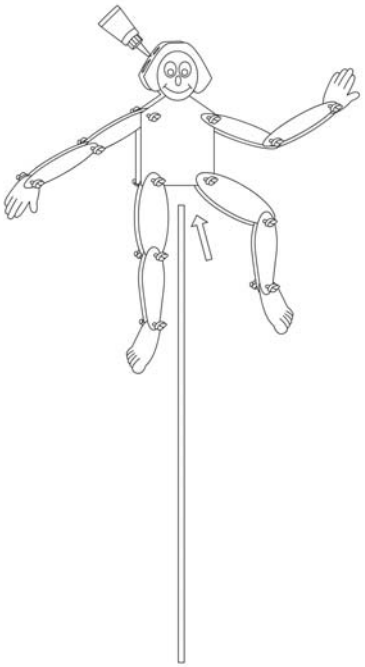
You are going to make a friend, not a toy! It will obey your commands as well. All what you need is little bit of patience, some sewing skills, and materials like one thick paper card, folded in half (like the wedding card), a big needle, strong thread of length approximately 1m, strong stick (eerkkil/bamboo) approximately 25cm long and 3mm width, sketch pen, fevicol and scissors.

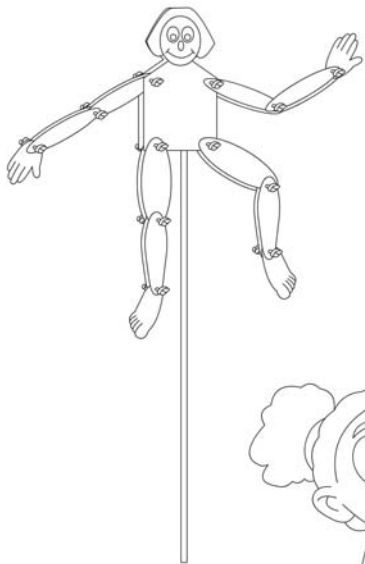
Draw the face, body, hands and leg parts of the puppet on one side of the folded card as shown. Cut them out neatly. You can see each part is double except the palms. Arrange it with each part next to the other with palms at the end. One of the palms will be needed to be drawn again. Now be ready with the needle and thread. Tie three knots on one end of the thread and sew the cut out with one part inside another (see picture). After taking out the thread, tie three knots at the other end too and cut it. Remember that the knot should be very near to the paper so that the joint won't be too loose.

Join all parts and make sure that each one moves freely. Please note that the end parts will have single pieces only. Now cut the extra lengths of thread at each joint. The doll is ready. You can place it in any posture you like. But to make it dance, we have to fix the long stick inside the body as shown. Apply fevicol inside the head portion of the card and on the stick up to the required length and fix it. Don't forget to apply pressure on the card where stick is inside. Wait for few minutes to dry and it's ready to dance too.

Hold the stick in one hand and give a twist. Give twist in reverse direction too. Did you love it? You may add colour to your doll now. What about making a monkey next time? Can you draw your own picture, and make yourself dance? Explore.







16. Plastic Carry Bag Kite

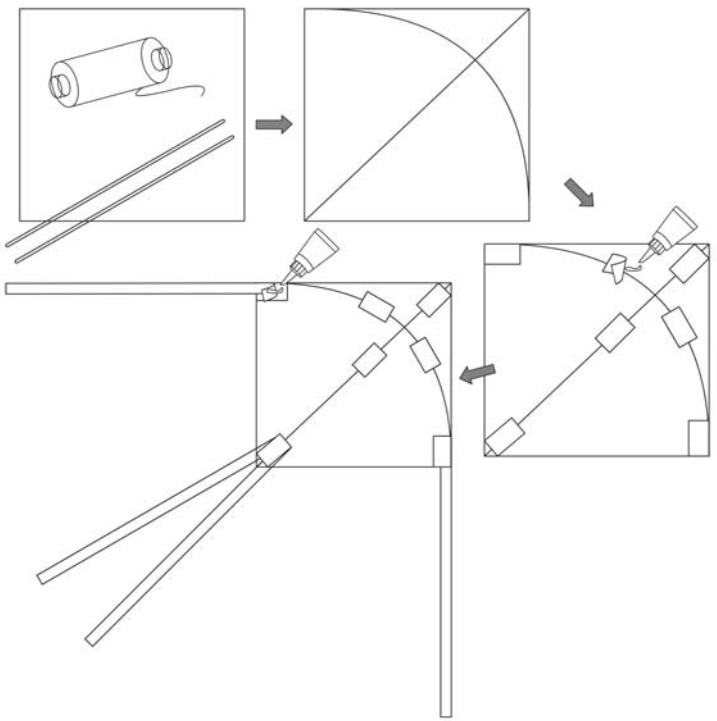
The best use of properties.

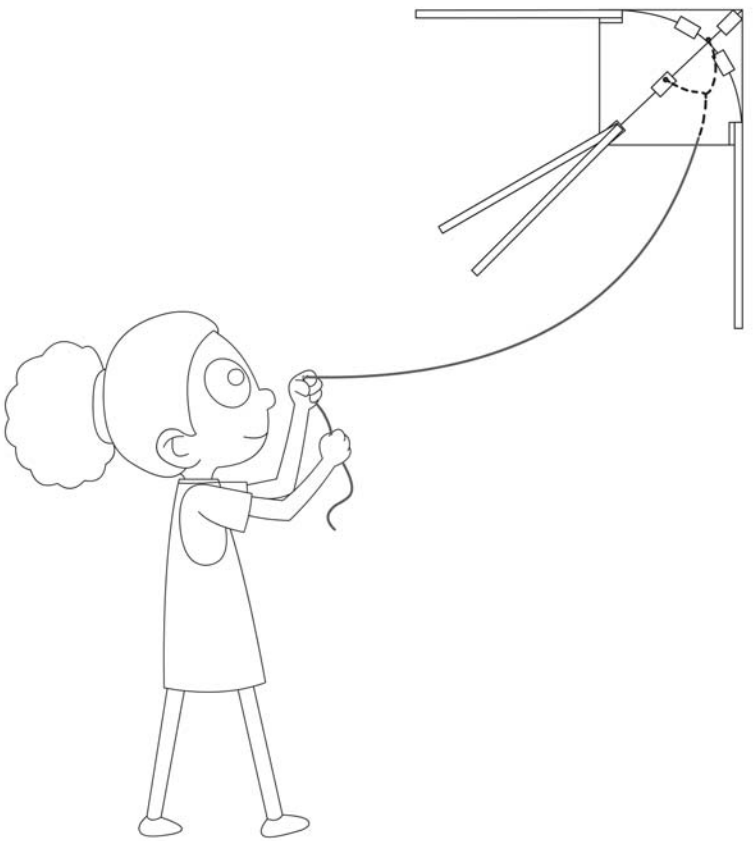
This is a result of my quest to find the best use of a thin plastic carry bag. Later I found that it's available in internet too (<Plastic cover kite>). If you know how to make a paper kite, this is only an extension to it. What I am trying tell you is we can make use of the thin plastic carry bag(thickness less than 5 micron which is banned due to ecological reasons but still available at many parts of India) to make a kite. But you should make sure that you won't leave behind any parts of it here and there. You may use news-paper/any other thin paper to replace the plastic carry bag as well.

Materials needed : One thin polythene bag from which we can get a square plastic sheet of size at least 25cm x 25cm to a maximum of 30cm x 30cm. (The plastic sheet provided by some hotels to serve food on a plate also is perfect), two eerkkil sticks one strong and one flexible- length according to the sheet size, fevicol and thread (both strong and normal).

Cut the square sheet from the bag and keep it on the ground/table. Keep the strong eerkkil stick in the middle, diagonally from one end to other, and fix it on the sheet with the help of three glued papers (or cello tapes in this case). Now take the flexible eerkkil and bend it as shown and fix it in the same way. Give two additional pieces of paper one at the centre and one where they cross. The body of the kite is ready. Now take four long pieces of the plastic sheet approximately 3cm x 4cm size and attach them to the body as wings and tails as shown with the help of glued papers/ cello tape. Take a piece of strong thread approximately 20cm long and tie it one end at the cross and other in the middle. You may take the help of a big needle for this. Please remember that the thread comes on the side opposite to the sticks. Now take

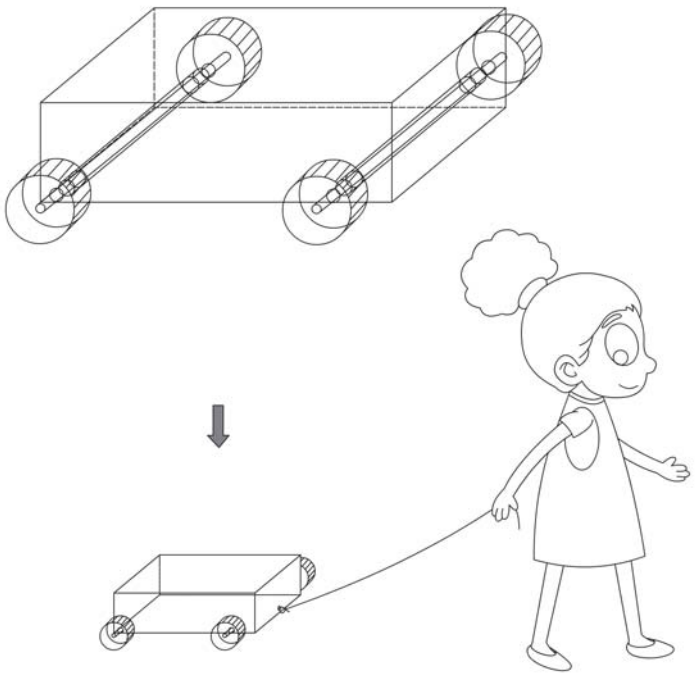
the normal thread and attach it to this strong thread in the middle slightly near the front. Your kite is ready to fly. It's as professional as the kite you buy from the market. Ask your friends or parents how to fly a kite if you don't know it. You may take it to the beach next time and I will be thankful if you don't forget to be friends with the kite maker too!





17. Toy Car

See this picture. With the skills you have learned here, can you try making this or something better than this??



Also look for origami on Youtube or ask your friends and learn:

1. Normal paper ship and paper aeroplane - basic origami.
2. Flapping wing bird - advanced level origami.
3. Jumping frog - advanced level origami.
4. News paper caps - useful origami.
5. News paper bin - useful origami.
6. Paper box - useful origami.
7. Never ending book - Life is never ending - Gives hope.
8. Rotating tetrahedron - Life is never ending - Gives hope.
9. An aeroplane that comes back to our hand - Magic Origami.
10. Different types of aeroplanes, ships and boxes.

www.arvindguptatoys.com and many other webchannels are good resources to learn, but please make sure that you never get addicted to it. Using your own brain and living in present is far better than everything.

Thank You for reading this book.

Please share your knowledge and materials with friends and try to learn from them too. That will be the best way of saying thanks to me.

About the author :

Subid, popularly known as 'Subid Ahimsa', for his works on Ahimsa Toys, lives an unconventional life, leaving aside his sound educational qualifications. Ahimsa toys and children helped to rejuvenate his life after he experienced major setbacks during his experiments with truth, he says. Please google <subid ahimsa> for more.

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